

IN THE CLAIMS

Please cancel Claims 4, 6, 7, and 11-16 without prejudice or disclaimer.

Claim 1 (currently amended): An apparatus for controlling an actuator having a moveable member and having a coil that influences movement of the member via a drive current to said coil, comprising:

a sensing ~~unit~~ circuit for sensing a voltage corresponding to the voltage across said coil and providing a first signal corresponding to said sensed voltage and indicative of the velocity of said moveable member;

a generation circuit for providing a second signal indicative of a target voltage corresponding to a target velocity for said moveable member; and

a controller receiving said first signal and said second signal and responsive thereto for determining a compensation signal characterized as an analog type response regulated to said target voltage for effectuating said target velocity,

wherein said controller includes a first node for receiving said first signal and said second signal and determining a difference therebetween and providing said difference to a proportional part and an integrator part;

said integrator part providing a third signal which is indicative of a mathematical integration of said difference and said proportion part providing a forth signal which is indicative of a multiple of said difference; and

said controller further having a summing node for receiving said third signal and said forth signal and responsive thereto for determining a summed signal which corresponds to said compensation signal,

said integrator part further including a cancellation circuit coupled with said sensing unit and operable for determining a DC offset and providing said DC offset to said integrator part for said mathematical integration for canceling said DC offset from said compensation signal.

Claim 2 (original): The apparatus of Claim 1, wherein said compensation signal is further characterized as an analog type response regulated to said target voltage with a resolution free of ripple about said target voltage.

Claim 3 (original): The apparatus of Claim 1, wherein said compensation signal is characterized by a voltage step which is proportional to a remaining error with an infinite resolution approaching said target voltage over a constant time period.

Claim 4 (cancelled)

Claim 5 (currently amended): The apparatus of Claim ~~4~~ 1 wherein said third signal is a voltage signal characterized by a voltage step which is proportional to a remaining error.

Claims 6 and 7 (cancelled)

Claim 8 (currently amended): The apparatus of Claim ~~4~~ 1 further including a cancellation circuit coupled with said sensing unit and said integrator part and operable for determining DC offset of said sensing unit and said integrator part and providing said DC offset to said integrator part for said mathematical integration for canceling said DC offset from said compensation signal.

Claim 9 (original): The apparatus of Claim 8, wherein said DC offset is determined prior to sensing said coil voltage.

Claim 10 (original): The apparatus of Claim 1 further including an amplifier unit having an input for receiving said compensation signal and responsive thereto for providing a corresponding current for application to said coil.

Claims 11-16 (cancelled)